WHAT IS CLAIMED IS:

1. An autofocus apparatus comprising:

a photographing optical system having at least a focus adjusting lens disposed movably and an optical element for splitting light beams inputted and emerging from an object;

a first focusing estimating device having a first optical system for forming an image corresponding to the object by inputting one light beam of the light beams split by said optical element, a first imaging element for picking up the image obtained by said first optical system and converting it into an electric signal, and a first data creating device for selecting a proper frequency component from the electric signal obtained by said first imaging element and, on the basis of a level of this frequency component, creating an item of data for focusing the image on said first imaging element upon the object;

a second focusing estimating device having a second optical system for forming an image corresponding to the object by inputting the other light beam of the light beams split by said optical system, an image re-forming optical system for respectively re-forming, into images, the light beams passing through portions with different pupils among the light beams for forming the image formed by said second optical system, a second imaging element for

picking up the images obtained by said image re-forming optical system, and a second data creating device for creating an item of data for focusing the image on said first imaging element upon the object on the basis of a positional deviation between the images on said second imaging element;

a focusing estimation selecting device for selecting at least one item of data out of the data given from said first focusing estimating device and the data from said second focusing estimating device; and

a moving device for moving said focus adjusting lens on the basis of the data selected by said focusing estimation selecting device.

2. The autofocus apparatus according to claim 1, wherein said focusing estimation selecting device selects the data from said second focusing estimating device when the image picked up by said first imaging element is roughly focused on, and selects the data from said first focusing estimating device when the image picked up by said first imaging element is finely focused on.

3. The autofocus apparatus according to claim 1, wherein said focusing estimation selecting device, if any one item of the data of two items of data from said

first focusing estimating device and from said second focusing estimating device is useless, selects the other item of data.

4. The autofocus apparatus according to claim 1, wherein said focusing estimation selecting device selects any one item of data of two items of data from said first focusing estimating device and from said second focusing estimating device with reference to data for specifying a depth of field.

5. The autofocus apparatus according to claim 4, wherein said photographing optical system has a stop disposed posterior to said optical element, and

the data for specifying the depth of field is an aperture value of said stop.

6. The autofocus apparatus according to claim 4, wherein said photographing optical system has a variable magnification lens disposed movably, and

the data for specifying the depth of field are about one or both of positions of said focus adjusting lens and of said variable magnification lens.

7. The autofocus apparatus according to claim 4, wherein the data for specifying the depth of field are about whether or not optical accessary is attached

thereto and about a kind of the optical accessary.

8. The autofocus apparatus according to claim 1, further comprising:

an object dimension calculating device for calculating a real dimension of the object on the basis of a distance from an image side principal point of said photographing optical system to an image surface, a distance from an object-side principal point of said photographing optical system to the object, and a dimension of the object on said first imaging element;

an object dimension setting device for setting a dimension of the object; and

a focusing object controlling device for comparing the object real dimension calculated by said object dimension calculating device with the object dimension set by said object dimension setting device, and controlling said first focusing estimating device and said second focusing estimating device on the basis of a result of this comparison.

9. The autofocus apparatus according to claim 8, wherein said focusing object controlling device controls said first focusing estimating device and said second focusing estimating device so as to focus on the relevant object when the object real dimension calculated by said object dimension calculating device

is substantially the same as the object dimension set by said object dimension setting device.

10. The autofocus apparatus according to claim 8, wherein said object dimension setting device contains a standard human body dimension set therein.

11. The autofocus apparatus according to claim 8, wherein said focusing object controlling device controls said first focusing estimating device and said second focusing estimating device so as to focus on an object exclusive of the relevant object when the object real dimension calculated by said object dimension calculating device is substantially the same as the object dimension set by said object dimension setting device.

12. The autofocus apparatus according to claim 8, wherein said object dimension calculating device calculates a distance from said photographing optical system to the object on the basis of a positional deviation between the images respectively picked up by said plurality of second imaging elements.

13. The autofocus apparatus according to claim 8, wherein said second focusing estimating device is disposed so that said plurality of image re-forming

optical systems and said plurality of second imaging elements are capable of picking up a plurality of portions of the image formed by said second optical system, and

said object dimension calculating device is capable of calculating the real dimension of respective objects corresponding to the plurality of portions of the image formed by said second optical system.

14. The autofocus apparatus according to claim 8, further comprising:

an object dimension displaying device for displaying, on a display medium, the object real dimension calculated by said object dimension calculating device.

15. The autofocus apparatus according to claim 1, further comprising:

a focus area setting device for setting a size of a focus area in which to create the data for focusing the image on a relevant area upon the object in an area on said first imaging element,

wherein said first focusing judging device creates the data for focusing the image on said first imaging element upon the object, with respect to the focus area having the size set by said focus area setting device.

16. The autofocus apparatus according to claim 15, wherein said focus area setting device sets the size of the focus area of said first focusing estimating device larger than the focus area of said second focusing estimating device.

17. The autofocus apparatus according to claim 15, wherein said focus area setting device sets the size of the focus area of said first focusing estimating device smaller than the focus area of said second focusing estimating device.

18. The autofocus apparatus according to claim 15, wherein a plurality of focus areas are previously set in said second focusing estimating device,

said focus area setting device detects the focus areas adjacent to each other and having substantially the same distance from said photographing optical system to the object corresponding to the image on the relevant focus area out of the plurality of focus areas on the basis of pieces of data respectively created about the plurality of focus areas by said second focusing estimating device, and sets a size of the focus area of said first focusing estimating device in accordance with a total size of these focus areas.

19. The autofocus apparatus according to claim

15, further comprising:

a focus size inputting device for inputting data about the size of the focus area,

wherein said focus area setting device sets the size of the focus of the said first focusing estimating device on the basis of the data about the focus area size inputted by said focus size inputting device.

20. The autofocus apparatus according to claim 1, further comprising:

a focus position inputting device for inputting data about a position of the focus area in which to create the data for focusing the object corresponding to the image on the relevant area in an area on said first imaging element,

wherein said first focusing judging device and said second focusing judging device create the data for focusing the image on said first imaging element upon the object with respect to the focus area existing in the position inputted by said focus position inputting device.

21. The autofocus apparatus according to claim 20, wherein said focusing estimation selecting device selects only the data given from said first focusing estimating device when the focus area position inputted by said focus position inputting device is a position

in which the image can not be detected by said image re-forming optical system.

22. The autofocus apparatus according to claim 15, further comprising:

a focus area displaying device for displaying, on a display medium, the data by which the focus area of said first focusing estimating device can be identified when said focusing estimation selecting device selects the data obtained by said first focusing estimating device, and displaying the data by which the focus area of said second focusing estimating device can be identified when selecting the data obtained by said second focusing estimating device.

23. The autofocus apparatus according to claim 1, wherein said photographing optical system, said first optical system and said second optical system are constructed so that the image formed by said first optical system has a size different from a size of the image formed by said second optical system.

24. An autofocus apparatus comprising:

a photographing optical system having at least a focus adjusting lens disposed movably, and an image forming lens for forming an image corresponding to an object by inputting light beams emerging from the

object;

an imaging element for picking up an image obtained by said photographing optical system and converting it into an electric signal;

a data creating device for selecting a proper frequency component from the electric signal obtained by said imaging element, and creating an item of data for focusing the image on said imaging element upon the object on the basis of a level of this frequency component;

a moving device for moving said focus adjusting lens on the basis of the data created by said data creating device;

a distance measuring device for measuring a distance from an object-side principal point of said photographing optical system to the object;

an object dimension calculating device for calculating a real dimension of the object on the basis of the distance, measured by said distance measuring device, from an object-side principal point of said photographing optical system to the object, a distance from an image side principal point of said photographing optical system to an image surface, and a dimension of the object on said first imaging element;

an object dimension setting device for setting a dimension of the object; and

a focusing object controlling device for comparing

the object real dimension calculated by said object dimension calculating device with the object dimension set by said object dimension setting device, and controlling an area in which said data creating device creates the data for focusing the image on said first imaging element upon the object on the basis of a result of this comparison.

25. An autofocus apparatus comprising:

a photographing optical system having at least a focus adjusting lens disposed movably, and an optical element for splitting light beams inputted and emerging from an object;

a first optical system for forming an image corresponding to the object by inputting one light beam of the light beams split by said optical element;

a first imaging element for picking up the image obtained by said first optical system;

a second optical system for forming the image corresponding to the object by inputting the other light beam of the light beams split by said optical element;

an image re-forming optical system for respectively re-forming, into images, the light beams passing through portions with different pupils among the light beams for forming the image formed by said second optical system;

a second imaging element for picking up the images obtained by said image re-forming optical system;

a data creating device for creating an item of data for focusing the image on said first imaging element upon the object on the basis of a positional deviation between the images on said second imaging element;

a moving device for moving said focus adjusting lens on the basis of the data created by said data creating device;

an object dimension calculating device for calculating a real dimension of the object on the basis of a distance from an image side principal point of said photographing optical system to an image surface, a distance from an object-side principal point of said photographing optical system to the object, and a dimension of the object on said first imaging element;

an object dimension setting device for setting a dimension of the object; and

a focusing object controlling device for comparing the object real dimension calculated by said object dimension calculating device with the object dimension set by said object dimension setting device, and controlling an area in which said data creating device creates the data for focusing the image on said first imaging element upon the object on the basis of a result of this comparison.

26. A lens barrel attachable to a camera comprising:

a photographing optical system having at least a focus adjusting lens disposed movably, and an optical element for splitting light beams inputted and emerging from an object;

a first optical system for forming an image corresponding to the object by inputting one light beam of the light beams split by said optical element; and

a moving device for moving said focus adjusting lens,

said camera comprising:

a first focusing estimating device having a first imaging element for picking up the image obtained by said first optical system and converting it into an electric signal, and a first data creating device for selecting a proper frequency component from the electric signal obtained by said first imaging element and, on the basis of a level of this frequency component, creating an item of data for focusing the image on said first imaging element upon the object;

a second focusing estimating device having a second optical system for forming an image corresponding to the object by inputting the other light beam of the light beams split by said optical element, an image re-forming optical system for respectively re-forming, into images, the light beams

passing through portions with different pupils among the light beams for forming the image formed by said second optical system, a second imaging element for picking up the images obtained by said image re-forming optical system, and a second data creating device for creating an item of data for focusing the image on said first imaging element upon the object on the basis of a positional deviation between the images on said second imaging element;

a focusing estimation selecting device for selecting at least one item of data out of the data given from said first focusing estimating device and the data from said second focusing estimating device; and

a controlling device of controlling said moving device on the basis of the data selected by said focusing estimation selecting device.

27. A lens barrel attachable to a camera body having a first focusing estimating device for creating focusing data for focusing an image on an imaging surface upon an object on the basis of a level of a frequency component selected from an electric signal obtained by an image formed on the imaging surface,

said lens barrel comprising:

a photographing optical system having a focus adjusting lens disposed movably, a beam splitting

element for splitting light beams incident on said focus adjusting lens and emerging from the object, and a first image forming lens for forming one light beam of the light beams split by said beam splitting element into an image, said photographing optical system guiding the light beam incident on said first image forming lens and emerging from the object onto the imaging surface;

a second focusing estimating device having a second image forming lens for forming the other light beam of the light beams split by said beam splitting element into an image, at least one pair of image re-forming lenses for respectively re-forming, into images, the light beams emerging from the object which beams have been image-formed by said second image forming lens, and an imaging element for picking up the images obtained by at least said one pair of image re-forming lenses, said second focusing estimating device creating an item of focusing data for focusing the image on the imaging surface upon the object on the basis of an imaging positional deviation on said imaging element between the images obtained by at least said one pair of image re-forming lenses; and

a moving device for moving said focus adjusting lens on the basis of the focusing data created by said first focusing estimating device or said second focusing estimating device.

28. The lens barrel according to claim 27, further comprising:

a selecting device for selecting at least one of said first focusing estimating device and said second focusing estimating device,

wherein said moving device moves said focus adjusting lens on the basis of the focusing data created by said focusing estimating device selected by said selecting device.

29. A lens barrel attachable to a camera body for generating an electric signal based on an image formed in an imaging surface,

said lens barrel comprising:

a photographing optical system having a focus adjusting lens disposed movably, a beam splitting element for splitting light beams incident on said focus adjusting lens and emerging from an object, and a first image forming lens for forming one light beam of the light beams split by said beam splitting element into an image, said photographing optical system guiding the light beam incident on said first image forming lens and emerging from the object onto the imaging surface;

a first focusing estimating device for creating focusing data for focusing an image on the imaging surface upon the object on the basis of a level of a

frequency component selected from the electric signal;

a second focusing estimating device having a second image forming lens for forming the other light beam of the light beams split by said beam splitting element into an image, at least one pair of image re-forming lenses for respectively re-forming, into images, the light beams emerging from the object which beams have been image-formed by said second image forming lens, and an imaging element for picking up the images obtained by at least said one pair of image re-forming lenses, said second focusing estimating device creating an item of focusing data for focusing the image on the imaging surface upon the object on the basis of an imaging positional deviation on said imaging element between the images obtained by at least said one pair of image re-forming lenses;

a selecting device for selecting at least one of said first focusing estimating device and said second focusing estimating device; and

a moving device for moving said focus adjusting lens on the basis of the focusing data created by focusing estimating device selected by said selecting device.

30. A lens barrel according to claim 28, wherein said selecting device, if the imaging positional deviation detected by said positional deviation

detecting device is under a predetermined value, selects said first focusing estimating device and, if larger than the predetermined value, selects said second focusing estimating device.

31. The lens barrel according to claim 29, wherein said selecting device, if the imaging positional deviation detected by said positional deviation detecting device is under a predetermined value, selects said first focusing estimating device and, if larger than the predetermined value, selects said second focusing estimating device.

32. A lens barrel attachable to a camera body containing identification data indicating whether to have a first focusing estimating device for creating an item of focusing data for focusing an image on an imaging surface upon an object on the basis of a level of a predetermined frequency component selected from an electric signal obtained by an image formed on the imaging surface,

said lens barrel comprising:

a photographing optical system having a focus adjusting lens disposed movably, a beam splitting element for splitting light beams incident on said focus adjusting lens and emerging from an object, and a first image forming lens for forming one light beam of

the light beams split by said beam splitting element into an image, said photographing optical system guiding the light beam incident on said first image forming lens and emerging from the object onto the imaging surface;

a second focusing estimating device having a second image forming lens for forming the other light beam of the light beams split by said beam splitting element into an image, at least one pair of image re-forming lenses for respectively re-forming, into images, the light beams emerging from the object which beams have been image-formed by said second image forming lens, and an imaging element for picking up the images obtained by at least said one pair of image re-forming lenses, said second focusing estimating device creating an item of focusing data for focusing the image on the imaging surface upon the object on the basis of an imaging positional deviation on said imaging element between the images obtained by at least said one pair of image re-forming lenses;

a judging device for judging whether or not said camera body has said first focusing estimating device on the basis of the identification data;

a selecting device for selecting, if said judging device judges that said camera body does not have said first focusing estimating device, said second focusing estimating device, and selecting, if said judging

device judges that said camera body has said first focusing estimating device, at least one of said first focusing estimating device and said second focusing estimating device; and

a moving device for moving said focus adjusting lens on the basis of the focusing data created by focusing estimating device selected by said selecting device.

33. The lens barrel according to claim 32, wherein said selecting device, when said judging device judges that said camera body has said first focusing estimating device, selects said first focusing estimating device if the imaging positional deviation detected by said positional deviation detecting device is under a predetermined value, and, if larger than the predetermined value, selects said second focusing estimating device.

34. A camera comprising:

a camera body for generating an electric signal based on an image form on an imaging surface;

a lens barrel including a photographing optical system having a focus adjusting lens disposed movably, a beam splitting element for splitting light beams incident on said focus adjusting lens and emerging from an object, and a first image forming lens for forming

one light beam of the light beams split by said beam splitting element into an image, said photographing optical system guiding the light beam incident on said first image forming lens and emerging from the object onto the imaging surface;

a first focusing estimating device for creating focusing data for focusing an image on the imaging surface upon the object on the basis of a level of a frequency component selected from the electric signal;

a second focusing estimating device having a second image forming lens for forming the other light beam of the light beams split by said beam splitting element into an image, at least one pair of image re-forming lenses for respectively re-forming, into images, the light beams emerging from the object which beams have been image-formed by said second image forming lens, and an imaging element for picking up the images obtained by at least said one pair of image re-forming lenses, said second focusing estimating device creating an item of focusing data for focusing the image on the imaging surface upon the object on the basis of an imaging positional deviation on said imaging element between the images obtained by at least said one pair of image re-forming lenses;

a selecting device for selecting at least one of said first focusing estimating device and said second focusing estimating device; and

a moving device for moving said focus adjusting lens on the basis of the focusing data created by said focusing estimating device selected by said selecting device,

wherein said camera body incorporates said first focusing estimating device and said selecting device, while said lens barrel incorporates said second focusing estimating device and said moving device.

35. A camera comprising:

a camera body for generating an electric signal based on an image form on an imaging surface;

a lens barrel including a photographing optical system having a focus adjusting lens disposed movably, a beam splitting element for splitting light beams incident on said focus adjusting lens and emerging from an object, and a first image forming lens for forming one light beam of the light beams split by said beam splitting element into an image, said photographing optical system guiding the light beam incident on said first image forming lens and emerging from the object onto the imaging surface;

a first focusing estimating device for creating focusing data for focusing an image on the imaging surface upon the object on the basis of a level of a frequency component selected from the electric signal;

a second focusing estimating device having a

second image forming lens for forming the other light beam of the light beams split by said beam splitting element into an image, at least one pair of image re-forming lenses for respectively re-forming, into images, the light beams emerging from the object which beams have been image-formed by said second image forming lens, and an imaging element for picking up the images obtained by at least said one pair of image re-forming lenses, said second focusing estimating device creating an item of focusing data for focusing the image on the imaging surface upon the object on the basis of an imaging positional deviation on said imaging element between the images obtained by at least said one pair of image re-forming lenses;

a selecting device for selecting at least one of said first focusing estimating device and said second focusing estimating device; and

a moving device for moving said focus adjusting lens on the basis of the focusing data created by said focusing estimating device selected by said selecting device,

wherein said camera body incorporates said first focusing estimating device, while said lens barrel incorporates said second focusing estimating device, said selecting device and said moving device.

36. The camera according to claim 34, wherein

said selecting device selects said first focusing estimating device if the imaging positional deviation detected by said positional deviation detecting device is under a predetermined value, and selects said second focusing estimating device if larger than the predetermined value.

37. The camera according to claim 35, wherein said selecting device selects said first focusing estimating device if the imaging positional deviation detected by said positional deviation detecting device is under the predetermined value, and selects said second focusing estimating device if larger than the predetermined value.

38. A camera comprising:

a camera body for picking up an image formed on a predetermined plane; and

a lens barrel comprising a photographing optical system, having a focus adjusting lens disposed movably, for guiding the light beam incident on said focus adjusting lens and emerging from an object onto the predetermined plane,

said camera body containing identification data indicating whether or not said camera body has a first focusing estimating device for creating focusing data for focusing the image on the predetermined plane upon

the object,

said lens barrel further comprising:

a second focusing estimating device for creating the focusing data for focusing the image on the predetermined plane upon the object;

a judging device for judging whether or not said camera body has said first focusing estimating device on the basis of the identification data;

a selecting device for selecting said second focusing estimating device when said judging device judges that said camera body does not have said first focusing estimating device, and selecting at least one of said first focusing estimating device and said second focusing estimating device when said judging device judges that said camera body has said first focusing estimating device; and

a moving device for moving the focus adjusting lens on the basis of the focusing data created by said focusing estimating device selected by said selecting device.

39. A camera comprising:

a camera body for generating an electric signal based on an image form on an imaging surface; and

a lens barrel comprising a photographing optical system having a focus adjusting lens disposed movably, a beam splitting element for splitting light beams

incident on said focus adjusting lens and emerging from an object, and a first image forming lens for forming one light beam of the light beams split by said beam splitting element into an image, said photographing optical system guiding the light beam incident on said first image forming lens and emerging from the object onto the imaging surface,

said camera body containing identification data indicating whether or not said camera body has a first focusing estimating device for creating focusing data for focusing the image on the imaging surface upon the object on the basis of a level of a predetermined frequency component selected from the electric signal,

said lens barrel further comprising:

a second focusing estimating device having a second image forming lens for forming the other light beam of the light beams split by said beam splitting element into an image, at least one pair of image re-forming lenses for respectively re-forming, into images, the light beams emerging from the object which beams have been image-formed by said second image forming lens, and an imaging element for picking up the images obtained by at least said one pair of image re-forming lenses, said second focusing estimating device creating an item of focusing data for focusing the image on the imaging surface upon the object on the basis of the imaging positional deviation on said

imaging element between the images obtained by at least said one pair of image re-forming lenses;

a judging device for judging whether or not said camera body has said first focusing estimating device on the basis of the identification data;

a selecting device for selecting said second focusing estimating device when said judging device judges that said camera body does not have said first focusing estimating device, and selecting at least one of said first focusing estimating device and said second focusing estimating device when said judging device judges that said camera body has said first focusing estimating device; and

a moving device for moving the focus adjusting lens on the basis of the focusing data created by said focusing estimating device selected by said selecting device.

40. The camera according to claim 39, wherein said focusing estimation selecting device, when said judging device judges that said camera body has said first focusing estimating device, selects said first focusing estimating device if the imaging positional deviation detected by said positional deviation detecting device is under a predetermined value, and selects said second focusing estimating device if larger than the predetermined value.

41. A lens barrel attachable to a camera body for generating an electric signal based on an image formed on an imaging surface,

said lens barrel comprising:

a photographing optical system having a focus adjusting lens disposed movably, and an image forming lens for forming a light beam incident on said focus adjusting lens and emerging from an object into an image, said photographing optical system guiding the light beam incident on said image forming lens and emerging from the object onto the imaging surface;

a focusing estimating device for creating an item of focusing data for focusing the image on the imaging surface upon the object on the basis of a level of a predetermined frequency component selected from the electric signal; and

a moving device for moving the focus adjusting lens on the basis of the focusing data created by said focusing estimating device.

42. A lens barrel attachable to a camera body for picking up an image formed on a predetermined plane,

said lens barrel comprising:

a photographing optical system having a focus adjusting lens disposed movably, a beam splitting element for splitting light beams incident on said focus adjusting lens and emerging from an object, and a

first image forming lens for forming one light beam of the light beams split by said beam splitting element into an image, said photographing optical system guiding the light beam incident on said first image forming lens and emerging from the object onto the predetermined plane;

a focusing estimating device having a second image forming lens for forming the other light beam of the light beams split by said beam splitting element into an image, at least one pair of image re-forming lenses for respectively re-forming, into images, the light beams emerging from the object which beams have been image-formed by said second image forming lens, and an imaging element for picking up the images obtained by at least said one pair of image re-forming lenses, said focusing estimating device creating an item of focusing data for focusing the image on the predetermined plane upon the object on the basis of the imaging positional deviation on said imaging element between the images obtained by at least said one pair of image re-forming lenses; and

a moving device for moving said focus adjusting lens on the basis of the focusing data created by said focusing estimating device.

43. An autofocus apparatus comprising:

a photographing optical system having at least a

focus adjusting lens disposed movably and an image forming lens for forming, into an image, light beams incident on said focus adjusting lens and emerging from an object;

a plurality of focusing estimating devices for creating focusing data for focusing an image formed on a predetermined plane through said photographing optical system, upon the object;

a storage device stored with a correction value for the focusing data created by at least one of said plurality of focusing estimating devices;

a correcting device for correcting, with the correction value, the focusing data corresponding to the correction value stored in said storage device;

a selecting device for selecting at least one of said plurality of focusing estimating devices; and

a moving device for moving said focus adjusting lens on the basis of the focusing data created by said focusing estimating device selected by said selecting device, or the relevant corrected focusing data if the relevant focusing data has been corrected by said correcting device.

44. An autofocus apparatus comprising:

a photographing optical system having at least a focus adjusting lens disposed movably, a beam splitting element for splitting light beams incident on said

focus adjusting lens and emerging from an object, a first image forming lens for forming one light beam of the light beams split by said beam splitting element into an image, and a second image forming lens for forming the other light beam of the light beams split by said beam splitting element into an image;

a first focusing estimating portion creating focusing data for focusing the image upon said object on a first plane on the basis of the image obtained by said first image forming lens;

a second focusing estimating portion having a data detecting device for detecting an item of data for focusing the image obtained by said second image forming lens upon the object on a second plane, a storage device stored with the data detected by said data detecting device as a correction value when the image obtained by said first image forming lens is focused on the object on the first plane, and a data creating device for correcting the data detected by said data detecting device on the basis of the correction value stored in said storage device and for creating an item of focusing data for focusing the image obtained by said first image forming lens upon said object on the first plane;

a selecting portion for selecting at least one of said first focusing estimating portion and said second focusing estimating portion; and

a moving device for moving the focus adjusting lens on the basis of the focusing data created by said focusing estimating device selected by said selecting portion.

45. The autofocus apparatus according to claim 44, further comprising:

a storage controlling device for storing said storage device with the data detected by said data detecting portion as the correction value when said first focus estimating portion creates the focusing data indicating that the image obtained by said first image forming lens is focused on the object on the first plane.

46. An autofocus apparatus comprising:

a photographing optical system having at least a focus adjusting lens disposed movably, a beam splitting element for splitting light beams incident on said focus adjusting lens and emerging from an object, a first image forming lens for forming one light beam of the light beams split by said beam splitting element into an image, and a second image forming lens for forming the other light beam of the light beams split by said beam splitting element into an image;

a first focusing estimating portion having a first imaging element for picking up the image obtained by

said first image forming lens and converting it into an electric signal, a level detecting device for detecting a level of a proper frequency component from the electric signal obtained by said first imaging element, and a first data creating device for creating an item of focusing data for focusing the image on said first imaging element upon the object on the basis of the frequency component level detected by said level detecting device;

a second focusing estimating portion having an image re-forming optical system for respectively re-forming, into images, the light beams passing through portions with different pupils among the light beams for forming the image formed by said second image forming lens, a second imaging element for picking up the images obtained by said image re-forming optical system, a positional deviation detecting device for detecting an imaging positional deviation on said second imaging element, a storage device stored, as a correction value, with the imaging positional deviation detected by said positional deviation detecting device when the image on said first imaging element is focused on the object, a correcting device for correcting, with the correction value stored in said storage device, the imaging positional deviation detected by said positional deviation detecting device, and a second data creating device for creating an item of focusing

data for focusing the image on said first imaging element upon the object on the basis of the imaging positional deviation corrected by said correcting device;

a selecting portion for selecting at least one of said first focusing estimating portion and said second focusing estimating portion; and

a moving device for moving said focus adjusting lens on the basis of the focusing data created by said focusing estimating device selected by said selecting portion.

47. The autofocus apparatus according to claim 46, further comprising:

a storage controlling device for storing said storage device with the imaging positional deviation detected by said positional deviation detecting device as the correction value when said first focus estimating portion creates the focusing data indicating that the image on said first imaging element is focused on the object.

48. The autofocus apparatus according to claim 46, wherein said selecting portion selects said first focusing estimating portion if the imaging positional deviation detected by said positional deviation detecting device is under a predetermined value, and

selects said second focusing estimating portion if larger than the predetermined value.

49. An autofocus apparatus comprising:

a photographing optical system having at least a focus adjusting lens disposed movably, and an image forming lens so movably disposed as to form light beams incident on said focus adjusting lens and emerging from an object into an image;

a plurality of focusing estimating devices for creating focusing data for focusing an image formed on a predetermined plane through said photographing optical system upon the object;

a position detecting device for detecting positional data of said image forming lens;

a correcting device for correcting the focusing data created by at least one of said plurality of focusing estimating devices on the basis of the data about the position detected by said position detecting device;

a selecting device for selecting at least one of said plurality of focusing estimating devices; and

a moving device for moving said focus adjusting lens on the basis of the focusing data created by said focusing estimating device selected by said selecting device, or the relevant corrected focusing data if the relevant focusing data has been corrected by said

correcting device.

50. An autofocus apparatus comprising:

a photographing optical system having at least a focus adjusting lens disposed movably, a beam splitting element for splitting light beams incident on said focus adjusting lens and emerging from an object, a first image forming lens for forming one light beam of the light beams split by said beam splitting element into an image, and a second image forming lens for forming the other light beam of the light beams split by said beam splitting element into an image;

a first focusing estimating portion for creating the focusing data for focusing the image obtained by said first image forming lens upon the object on a first plane on the basis of the image obtained by said first image forming lens;

a second focusing estimating portion having a data detecting device for detecting the data for focusing the image obtained by said second image forming lens upon the object on a second plane, a position detecting device for detecting the position data of said first image forming lens, a correcting device for correcting the data detected by said data detecting device on the basis of an item of data corresponding to the data about the position of said first image forming lens that has been detected by said position detecting

device, which item of data is obtained from a relationship between the position of said first image forming lens and the data detected by said data detecting device when the image on the first plane is focused on the object, and a data creating device for creating focusing data for focusing the image obtained by said first image forming lens upon the object on the first plane;

a selecting portion for selecting at least one of said first focusing estimating portion and said second focusing estimating portion; and

a moving device for moving said focus adjusting lens on the basis of the focusing data created by said focusing estimating device selected by said selecting portion.

51. An autofocus apparatus comprising:

a photographing optical system having at least a focus adjusting lens disposed movably, a beam splitting element for splitting light beams incident on said focus adjusting lens and emerging from an object, a first image forming lens for forming one light beam of the light beams split by said beam splitting element into an image, and a second image forming lens for forming the other light beam of the light beams split by said beam splitting element into an image;

a first focusing estimating portion for picking up

the image obtained by said first image forming lens and converting it into an electric signal, a level detecting device for detecting a level of a proper frequency component from the electric signal obtained by said first imaging element, and a first data creating device for creating an item of focusing data for focusing the image on said first imaging element upon the object on the basis of the frequency component level detected by said level detecting device;

a second focusing estimating portion having an image re-forming optical system for respectively re-forming, into images, the light beams passing through portions with different pupils among the light beams for forming the image formed by said second image forming lens, a second imaging element for picking up the images obtained by said image re-forming optical system, a positional deviation detecting device for detecting an imaging positional deviation on said second imaging element, a position detecting device for detecting position data of said first image forming lens, a correcting device for correcting imaging positional deviation detected by said data detecting device on the basis of an imaging positional deviation corresponding to the data about the position of said first image forming lens that has been detected by said position detecting device, which imaging positional deviation is obtained from a relationship between the

position of said first image forming lens and the imaging positional deviation detected by said positional deviation detecting device when the image on the first imaging element is focused on the object, and a second data creating device for creating focusing data for focusing the image on said first imaging element upon the object on the basis of the imaging positional deviation corrected by said correcting device;

a selecting portion for selecting at least one of said first focusing estimating portion and said second focusing estimating portion; and

a moving device for moving said focus adjusting lens on the basis of the focusing data created by said focusing estimating device selected by said selecting portion.

52. An autofocus apparatus comprising:

a photographing optical system having at least a focus adjusting lens disposed movably, a beam splitting element for splitting light beams incident on said focus adjusting lens and emerging from an object, a first image forming lens so disposed movably as to form one light beam of the light beams split by said optical element into an image, and a second image forming lens for forming the other light beam of the light beams split by said beam splitting element into an image;

a first focusing estimating portion having a first imaging element for picking up the image obtained by said first image forming lens and converting it into an electric signal, a level detecting device for detecting a level of a proper frequency component from the electric signal obtained by said first imaging element, and a first data creating device for creating an item of focusing data for focusing the image on said first imaging element upon the object on the basis of the frequency component level detected by said level detecting device;

a second focusing estimating portion having an image re-forming optical system for respectively re-forming, into images, the light beams passing through portions with different pupils among the light beams for forming the image formed by said second image forming lens, a second imaging element for picking up the images obtained by said image re-forming optical system, a positional deviation detecting device for detecting an imaging positional deviation on said second imaging element, a correcting device for correcting a position of said image forming lens on the basis of an item of position data of said second image forming lens that corresponds to data about the position, detected by said position detecting device, of said first image forming lens, which item of position data is obtained from such a relationship

between the position of said first image forming lens and the position of said second image forming lens that the imaging positional deviation on said second imaging element disappears when the image on said first imaging element is focused on, and a second data creating device for creating focusing data for focusing the image on said first imaging element upon the object;

a selecting portion for selecting at least one of said first focusing estimating portion and said second focusing estimating portion; and

a moving device for moving said focus adjusting lens on the basis of the focusing data created by said focusing estimating device selected by said selecting portion.

53. The autofocus apparatus according to claim 51, wherein said selecting portion selects said first focusing estimating portion if the imaging positional deviation detected by said positional deviation detecting device is under a predetermined value, and selects said second focusing estimating portion if larger than the predetermined value.

54. The autofocus apparatus according to claim 52, wherein said selecting portion selects said first focusing estimating portion if the imaging positional deviation detected by said positional deviation

detecting device is under a predetermined value, and selects said second focusing estimating portion if larger than the predetermined value.